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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/698,183      | 10/31/2003  | Jean Luc Sibiet      | A01460              | 9914             |

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EXAMINER

KINNEY, ANNA L

ART UNIT PAPER NUMBER

1731

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/698,183 | <b>Applicant(s)</b><br>SIBIET ET AL. |  |
|                              | <b>Examiner</b><br>Anna Kinney       | <b>Art Unit</b><br>1731              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see Remarks, p. 4, ¶ 3 to p. 5, ¶ 1, filed December 20, 2006, with respect to the rejection(s) of claim(s) 1-2 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hinckley et al (U.S. Patent 3,167,515) and Barbe et al (WO 90/11403).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinckley et al (U.S. Patent 3,167,515) in view of Barbe et al (WO 90/11403).

With respect to claim 1, Hinckley discloses a method for preparation of hydrosulfites for bleaching wood pulps (col. 1, lines 10-12) comprising combining: (i) an aqueous solution comprising sodium borohydride and sodium hydroxide; and (ii) an aqueous solution comprising sodium bisulfite (col. 1, lines 62-67 and lines 44-48); wherein a ratio of (moles bisulfite-moles hydroxide)/moles borohydride is from 2.0 to 5.7 (converting pH to M OH<sup>-</sup> given a total volume of 503 cc.; col. 2, lines 1-19 and 30-40) which contains two specific points within the claimed range of from 0 to 7.8. Hinckley does not disclose expressly that this mixture is used on mechanical pulp or in what

equipment mixing occurs. However, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a chemical mixer to mix chemicals.

Barbe et al discloses brightening mechanical pulp with hydrosulfite (p. 1, lines 8-18).

Hinckley and Barbe are analogous art because they are both directed to a similar problem solving area, that of bleaching (e.g., brightening) wood pulp.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the hydrosulfite of Hinckley to a mechanical pulp as described by Barbe to obtain the invention as specified in claim 1.

The motivation would have been that using a reducing agent such as hydrosulfite is the oldest process of bleaching mechanical and chemimechanical pulps to improve brightness levels, color or yellowness, and rapid reversion characteristics (Barbe, p. 1, lines 8-18).

With respect to claim 2, Hinckley is applied as in the rejection to claim 1, above. The ratios contain one specific point within the claimed range of from 4 to 7.5.

Hinckley does not disclose expressly the ratio of application to pulp, or the use of a chelant.

With respect to claim 8, Barbe discloses addition of at least one chelant to the pulp slurry (p. 4, lines 12-20).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use application rates and a chelant as described by Barbe when using the hydrosulfite composition of Hinckley.

The motivation would have been that use of a chelating agent to remove naturally occurring trace metals is recommended (Barbe, p. 1, lines 26-29).

With respect to claim 9, Hinckley is applied as in the rejection to claim 2, above.

Claims 3-7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinckley and Barbe, as applied to claims 1, 2, and 9 above, and further in view of Ellis et al.

With respect to claims 3 and 10, Hinckley and Barbe do not disclose the time from mixing to application. However, Hinckley does disclose that the mixtures are not sufficiently stable to permit storage for any prolonged period (col. 1, lines 55-57).

Ellis discloses that sodium dithionite solutions have an extremely short storage life, and decompose at about 20% per hour (col. 2, lines 1-7).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a hydrosulfite mixture generated in-situ (as described by Ellis) as soon as possible after mixing in the preparation and pulp brightening process of Hinckley and Barbe to obtain the invention as specified in claims 3 and 10.

The motivation would have been that the decomposition proceeds rapidly to completion (Ellis, col. 1, lines 40-46).

With respect to claim 4, Hinckley is applied as in the rejection to claim 2.

With respect to claim 5, Ellis is applied as in the rejection to claim 3.

With respect to claim 6, Hinckley, Barbe, and Ellis do not disclose expressly that the output of the chemical mixer is substantially homogeneous prior to addition to the pulp slurry. At the time of the invention, however, it would have been obvious to a

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person of ordinary skill in the art to mix the chemicals well (i.e., until substantially homogeneous). The motivation would have been to obtain as complete reaction as possible.

With respect to claim 7, Barbe discloses that the ratio of sodium borohydride to pulp is about 0.01 to about 1.5% (p. 4, lines 12-18 and p. 5, lines 27-35), which encompasses the claimed range of from 0.015% to 0.12%.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 2 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, and 5 of copending Application No. 10/465,433 in view of Hinckley. With respect to claims 1 and 2, Application '433 discloses a method for brightening virgin mechanical pulp (claim 5); said method comprising combining: sodium borohydride, sodium hydroxide, and sodium bisulfite; and adding output to an aqueous slurry of virgin mechanical pulp (claim 1); wherein a ratio of (moles bisulfite-moles hydroxide)/moles borohydride is from 0 to 14.4

(claim 3), which encompasses the claimed range of from 0 to 7.8 for claim 1 and the claimed range of from 4 to 7.5 for claim 2. Application '433 does not disclose expressly combining: (i) an aqueous solution comprising sodium borohydride and sodium hydroxide; and (ii) an aqueous solution comprising sodium bisulfite, in a chemical mixer. Hinckley is applied as in the rejection to claim 1, above.

At the time of the invention, it would have been obvious to combine two aqueous solutions as described by Hinckley in the brightening solution of Application '433 to obtain the invention as specified in claims 1-2. The motivation would have been that during the act of dissolving hydrosulfites in water considerable amounts are destroyed (col. 1, lines 20-22), and that substantially quantitative yields can be obtained by dissolving in water, with a pH maintained at 10 or greater, an alkali metal borohydride and an alkali metal bisulfite (col. 1, lines 33-57).

This is a provisional obviousness-type double patenting rejection.

Claims 1 and 2 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 10/832,182 in view of Barbe. With respect to claim 1, Application '182 discloses a method comprising combining: (i) an aqueous solution comprising sodium borohydride and sodium hydroxide; and (ii) an aqueous solution comprising sodium bisulfite (claim 1), to an aqueous slurry of pulp; wherein a ratio of (moles bisulfite-moles hydroxide)/moles borohydride is from 0 to 25 (claim 2), which encompasses and contains one specific endpoint from the claimed range of from 0 to 7.8. Application '182 does not disclose expressly that the method is for brightening

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virgin mechanical pulp, or that the chemicals are mixed in a chemical mixer. Barbe is applied as in the rejection to claim 1, above.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to mix the chemicals in a chemical mixer and use the method for brightening virgin mechanical pulp, as described by Barbe, in the method of Application '182 to obtain the invention as specified in claim 1. The motivation would have been to obtain as complete reaction of the borohydride as possible and that using a reducing agent such as hydrosulfite is the oldest process of bleaching mechanical and chemimechanical pulps to improve brightness levels, color or yellowness, and rapid reversion characteristics (Barbe, p. 1, lines 8-18).

With respect to claim 2, Application '182 discloses that the ratio is from 0 to 25 (claim 2), which encompasses the claimed range of from 4 to 7.5.

This is a provisional obviousness-type double patenting rejection.

### ***Conclusion***

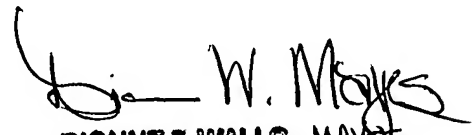
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALK

  
**DIONNE A. WALLS MAES**  
**PRIMARY EXAMINER**